


In the Claims,

1. (Previously presented) A computer-implemented method for communication and cooperative task completion between a community of distributed electronic agents communicating using a dynamically expandable interagent communication language ("ICL") and at least one other distributed component system, the other distributed component system communicating using a protocol incompatible with the ICL, the method comprising the acts of:
- a) receiving by a bridge agent a description of functional capabilities of components of the other distributed component system from a component registry of the other distributed component system;
 - b) translating the functional capabilities of components received in step (a) from the protocol of the other distributed component system into the ICL, to create a translated description;
 - c) adding to a facilitator registry of the community of distributed agents the translated description, wherein the facilitator registry is distinct from the component registry;
 - d) responsive to a request for service to the community of distributed agents, delegating an ICL sub-goal request to the bridge agent;
 - e) translating at the bridge agent the delegated ICL sub-goal request into the incompatible protocol of the other distributed system, to create a translated request; and
 - f) invoking one or more components of the other distributed component system using the translated request .

2. (Previously presented) A computer implemented method as recited in claim 1, wherein the request for service is generated by one of the components of the other distributed component system, the method further comprising the acts of:
- transmitting the request for service to the bridge agent; and
- translating the request for service into the ICL.
3. (Previously presented) A computer implemented method as recited in claim 1, wherein the request for service is received from an agent capable of communicating in the ICL.
4. (Cancelled)
5. (Previously presented) A computer implemented method as recited in claim 1, further comprising the acts of:
- receiving functional capabilities of one or more of the distributed electronic agents;
- adding the functional capabilities to the facilitator registry;
- determining a second ICL sub-goal necessary to accomplish the request for service;
- selecting from the facilitator registry an agent capable of completing the second ICL sub-goal; and
- delegating the second ICL sub-goal to the selected agent.


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6. (Previously presented) A computer implemented method as recited in claim 1, wherein the components of the other distributed component system are software based objects.
 7. (Previously presented) A computer implemented method as recited in claim 6, wherein the other distributed component system is a distributed object service.
 8. (Previously presented) A computer implemented method as recited in claim 7, wherein the other distributed component system utilizes Jini software.
 9. (Previously presented) A computer implemented method as recited in claim 7 wherein the other distributed component system utilizes Corba software.
 10. (Previously presented) A computer implemented method as recited in claim 7, wherein the other distributed component system utilizes Java software.
 11. (Cancelled)
 12. (Cancelled)
 13. (Cancelled)

14. (Previously presented) A computer readable medium as recited in claim 39, wherein the request for service originates as an incompatible request for service generated in the protocol incompatible with the ICL by one of the components registered in the component registry, the method further comprising the steps of:

transmitting the incompatible request for service to the bridge agent; and

translating the incompatible request for service into the ICL; and

transmitting the translated incompatible request for service from the bridge agent to the facilitator.

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15. (Previously presented) A computer readable medium as recited in claim 39, wherein the request for service is received from the community of distributed electronic agents.

16. (Previously presented) A computer readable medium as recited in claim 39 further comprising the steps of:

receiving functional capabilities of one or more of the distributed electronic agents;

adding the functional capabilities to the facilitator registry;

determining a second ICL sub-goal necessary to accomplish the request for service;

selecting from the facilitator registry an agent capable of completing the second ICL sub-goal; and

delegating the second ICL sub-goal to the selected agent.

17. (Previously presented) A computer readable medium as recited in claim 39, wherein the components of the other distributed component system are software based objects.
18. (Previously presented) A computer readable medium as recited in claim 17, wherein the other distributed component system is a distributed object service.
19. (Previously presented) A computer readable medium as recited in claim 18, wherein the other distributed component system utilizes Jini software.
20. (Previously presented) A computer readable medium as recited in claim 18, wherein the other distributed component system utilizes Corba software.
21. (Previously presented) A computer readable medium as recited in claim 18, wherein the other distributed component system utilizes Java software.
22. (Cancelled)
23. (Cancelled)

24. (Cancelled)

25. (Previously presented) A software based flexible computer architecture as recited in claim 40, wherein the components of the other distributed component system are software based objects and the other distributed component system is a distributed object service.

26. (Previously presented) A software based flexible computer architecture as recited in claim 25 wherein the other distributed component system is based on Jini software.

27. (Previously presented) A software based flexible computer architecture as recited in claim 25 wherein the other distributed component system is based on Corba software.

28. (Previously presented) A software based flexible computer architecture as recited in claim 25 wherein the other distributed component system is based on Java software.

29-38. (Cancelled)

39. (Previously presented) A computer readable medium containing a program providing instructions for coordinating communication and cooperative task completion between a community of distributed electronic agents communicating

using a dynamically expandable interagent communication language ("ICL") and at least one other distributed component system communicating using a protocol incompatible with the ICL, said instructions performing the steps of:

a) receiving by a bridge agent a description of functional capabilities of components of the other distributed component system from a component registry;

b) translating the functional capabilities of components received in step (a) from the protocol of the other distributed computing system into the ICL, to create a translated description;

c) adding to a facilitator registry of the community of distributed agents the translated description, wherein the facilitator registry is distinct from the component registry; and

d) responsive to a request for service to the community of distributed agents, delegating an ICL sub-goal request to the bridge agent, whereby the bridge agent will translate the ICL sub-goal request into the incompatible protocol of the other distributed component system to create a translated request used to invoke one or more components of the other distributed component system using the translated request .

40. (Previously presented) A software-based flexible computer architecture for communication and cooperative task completion between a community of distributed electronic agents communicating using a dynamically expandable interagent communication language ("ICL") and at least one other distributed component system, the other distributed component system communicating using a protocol incompatible with the ICL, the computer architecture comprising:

a plurality of electronic agents capable of communicating in the ICL, at least one of the agents being a bridge agent capable of translating between the ICL and the protocol understood by the other distributed component system, and further capable of translating a description of functional capabilities of components of the other distributed component system registered in a component registry; and

a facilitator capable of receiving from the bridge agent, in the ICL format, the translated description of functional capabilities of the components of the other distributed component system and registering the translated description of the functional capabilities in a facilitator registry, the facilitator further capable of receiving a service request in the ICL and in response to the service request, determining a sub-goal request necessary to accomplish the service request, and delegating the sub-goal request, in the ICL, to the bridge agent based upon a match between the sub-goal request and the functional capabilities registered in the facilitator registry, wherein the bridge agent will translate the ICL request into the protocol of the other distributed component system to invoke at least one of the components of the other distributed component system and wherein the component registry is distinct from the facilitator registry.

41. (Previously presented) A software based flexible computer architecture as recited in claim 40 wherein the bridge agent is integral with the facilitator.

42. (Cancelled)
